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**First Semester MBA Degree Examination, June 2012**  
**Statistics for Management**

Time: 3 hrs.

Max. Marks:100

**Note: 1. Answer any FIVE full questions.**  
**2. Use of statistical tables permitted.**

- 1 a. What is statistics? (03 Marks)  
b. Discuss the importance of statistics in business and management. (07 Marks)  
c. Present the following data through deviation bar diagram.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sales	110	135	140	150	160	165	250	340	420
Cost	95	105	130	125	130	170	260	350	450

(10 Marks)

- 2 a. What are the different types of mathematical average? (03 Marks)  
b. Discuss the different types of theoretical distribution. (07 Marks)  
c. Represent the following data by a histogram and determine the value of mode there from:

Weekly wage	10–15	15–20	20–25	25–35	35–55	55–70
No-of workers	40	60	50	30	40	15

(10 Marks)

- 3 a. The average marks secured in statistics by all the B.C.A students in their university examination is 60. The average of such mark of the Boys Students is 75 and that of the Girls student is 40. Find the ratio of the number of Boys and Girls in BCA class. (03 Marks)  
b. Find the missing frequency of the following series if the value of arithmetic average is 33,

X	10	12	60	70	40
F	5	10	?	2	5

(07 Marks)

- c. Find the co-efficient of variation if ;  
 $N = 15, \Sigma x = 150, \sigma = 5$ . Also discuss the importance of coefficient of variation in decision making. Give 3 examples. (10 Marks)

- 4 a. What is skewness? (03 Marks)  
b. Discuss the different types of correlation. (07 Marks)  
c. What do you mean by Primary and Secondary data? Also mention the methods of collecting primary data. (10 Marks)

- 5 a. From the following data compute the co-efficient of variations. Mean = 80, Md =75, Karl Pearsons co-efficient of skewness = 0.5. (03 Marks)  
b. From the following data, determine the co-efficient of correlation using the Pearson's method.

M <sub>1</sub>	75	60	40	30	15
M <sub>2</sub>	150	175	200	225	250

(07 Marks)

- c. Find regression equation of X on Y and Y on X.

X	1	3	5	7	9
Y	15	18	21	23	22

(10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- 6 a. Taking of the deviations of the time variable compute the trend values for the following data by the method of least square:

Days	1	2	3	4	5	6	7
Sales(Rs)	20	30	40	20	50	60	80

(10 Marks)

- b. If in the key punching of 80 column cards, the average mistakes per card is 0.3, what percent of cards will have i) No mistake; ii) One mistake; iii) Three mistakes. (05 Marks)
- c. The probability of a cancer patient escaping the death is  $\frac{1}{10}$ . Out of the 3 persons suffering from cancer, find the probability that at least one person will escape the death? (05 Marks)

- 7 a. If the average monthly income of 100 employees normally distributed is Rs 900 with a standard deviation of Rs 60, what should be the lowest monthly income of the 10 highest paid employees? (10 Marks)

- b. With the tossing of 5 coins for 3200 times, the number of heads coming up each time were observed as follows:

No of heads	5	4	3	2	1	0
Frequency	100	600	1000	900	400	200

Using  $X^2$  statistics, test the hypothesis that the coins were balanced. (10 Marks)

- 8 a. What is standard error formula, in test for difference in proportion of success? (03 Marks)
- b. From the data given below compute the index number by the weighted aggregative method of Marshall and Edge work. Also show that it is a good approximation to Fishers ideal index number.

Items	2003		2008	
	Price	Quantity	Price	Quantity
P	4	74	6	82
Q	10	125	8	140
R	14	40	12	33

(07 Marks)

- c. From the following sample data construct a table for analysis of variances to study the effects of the three detergents and the three different water temperature at 5% level of significance given that the critical value of F is 6.95 for  $V_1=2$ ,  $V_2= 2$  and  $V_3= 4$ ,

Detergent	Water Temperature		
	Cold	Warm	Total
P	7	6	4
Q	6	4	3
R	3	5	3

(10 Marks)

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